Remarks

Claims 24 and 28-38 were previously pending in the subject application. By this Amendment, applicants have amended claims 28 - 30 and36 and have canceled Claims 37 and 38 without prejudice. No new matter has been added by this Amendment.

Indefiniteness (Claim 36)

The indefiniteness rejection under 35 USC 112, 2nd paragraph, to Claim 36 is deemed moot in view of the above amendment to Claim 36. Claim 36 is now directed to an isolated plant microspore. Withdrawal of the rejection is respectfully requested.

Indefiniteness (Claims 28 and 29)

The indefiniteness rejection under 35 USC 112, 2nd paragraph, to Claims 28 and 29 is deemed moot in view of the above amendment to Claims 28 and 29 where the word "composition" has been deleted. Withdrawal of the rejection is respectfully requested.

Written Description (Claims 24 and 28-38)

The present Specification makes its perfectly clear to one of ordinary skill in the art how to practice the presently claimed invention. A mixed duplex oligonucleotide (MDON) is prepared that has homologous and heterologous regions to the targeted gene. The heterologous region is where the mutation (addition, deletion, replacement) occurs. The nature of the present invention and the underlying art is such that the only way to obtain a meaningful generic claim is to describe the composition in the basic unit of structure that is well art recognized, i.e., polynucleotides. The present Applicants have discovered that a gene in a microspore can be altered by introducing a mixed duplex oligonucleotide (MDON) into the microspore as taught in the Specification. Also as taught in the Specification, the MDON will have homologous regions and heterologous regions. The heterologous regions are responsible for the gene alteration. The Applicants disagree with the Examiner's characterization that the present claims primarily describe function and lack structure. There is nothing functional about the term MDON – it is a structure. As stated before, the Kmiec '350 and '181 patents have issued claims and specification language of similar scope. Withdrawal of the written description rejection to Claims 24 and 28-36 is respectfully requested.

Enablement (Claims 24 and 28-38)

All of the presently pending claims are fully enabled under the requirements of 35 USC 112. Gene repair, in and of itself, was known in the art at the time of the present priority date. See Kmiec '350 and Kmiec '181 both of record in this application which describe and broadly claim gene repair methods. The Applicants are generically claiming their invention in a manner that is not gene specific. The fact that unintended gene mutations may be a result of the methods taught in the Specification does not mean that the present claims are not enabled because the intended mutation can easily be identified using routine genetic engineering analysis. The present rejection is analogous to requiring that a claim to a chemical compound is not enabled because the process of making the chemical includes unwanted impurities or by-products. Nothing in the patent law requires that a process of making a compound/composition must be 100% efficient and without generation of by-products. The essence of the present enablement rejection is that the Applicants' process must be 100% efficient. The Applicants have adequately described how to make the MDONs and make mutated plants having a desired mutation. One skilled in the art can readily identify such mutants. Withdrawal of the rejection to Claims 24 and 28-36 is respectfully requested.

Novelty (Claims 30-32 and 26-38)

First, for clarification purposes, the Applicants are interpreting this rejection as a rejection of Claims 30-32 and 36 instead of "Claims 30-2 and 26-38" as written in the Office Action. That is an apparent typographical error as Claims 26 and 27 have been canceled and it would be redundant to list claims 30-32 where claims 26-38 are also listed in the rejection.

Claims 30-32 and 36 are not anticipated by the Hawkes et al reference already on the record. First, the amendment to Claim 30 limiting that claim and all claims depending from it to **isolated** plant microspores renders this rejection moot as Hawkes et al do not disclose, teach or suggest that isolated microspores could be used as a target tissue for gene repair. Additionally, Hawkes et al does not teach or suggest that microspores could be used as the target tissue and are silent at to the whether or not microspores would be a successful target tissue candidate, i.e., no reasonable expectation of success. For these reasons Hawkes et al is incapable of supporting a novelty rejection under 35 USC 102 nor an obvious rejection under 35 USC 103. Withdrawal of the 102 rejection is

respectfully requested.

Obviousness (Claims 24, 28, 29 and 33-36)

Claims 24, 28, 29 and 33-36 are non-obvious in view of Kmiec '181 in view of Fennell et al both already of record. The Fennell et al reference teaches the **transformation** of microspores, which is a technique known in the art. Fennell et al cannot be used as a secondary reference to combine with Kmiec '181 because of the differences already pointed out by the Applicants. Additionally, the Applicants' experience with employing the teachings of Fennell et al to transform microspores with the GFP gene has been disappointing. Attempts to introduce the GFP gene into canola microspores employing similar methods described by Fennell et al for transforming corn have been unsuccessful. Therefore, there could be no expectation of success in using the much smaller MDONs to produce a targeted mutation according to the present invention. Withdrawal of the 103 rejection to Claims 24, 28, 29 and 33-36 is respectfully requested.

Double patenting Rejection (Claims 30-36)

Claims 30-36 have been rejected under the judicially created doctrine of double patenting. The Examiner claims that the differences in making the non-transgenic herbicide resistant plants of the co-pending application 09/685,403 are inadequate to distinguish the products. The Applicants disagree with this characterization. Co-pending application 09/685,403 does not teach or suggest that microspores be employed as a target tissue for treatment with MDONs. For this reason it is respectfully requested that the double patenting rejection be withdrawn.

In view of the foregoing remarks and the amendments above, the applicants believe that the currently pending claims are in condition for allowance, and such action is respectfully requested.

Telephone Interview

The Applicants and the undersigned thank the Examiner for allowing a telephone interview on 5 November 2004 where the Applicants discussed the present claim language and whether or not there is a reasonable expectation of success to use microspores as target tissue under 103(a) particularly in view of Fennell et al. Applcants acknowledge the Interview summary sent by the Examiner.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

The applicant also invites the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

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JS